# OBJECTIVE
# REAL TIME CASUALTY ASSESSMENT
# (Objective RTCA)

**Briefing by:**

**Bob Wolfinger**
**Project Director**
**407-384-5196**

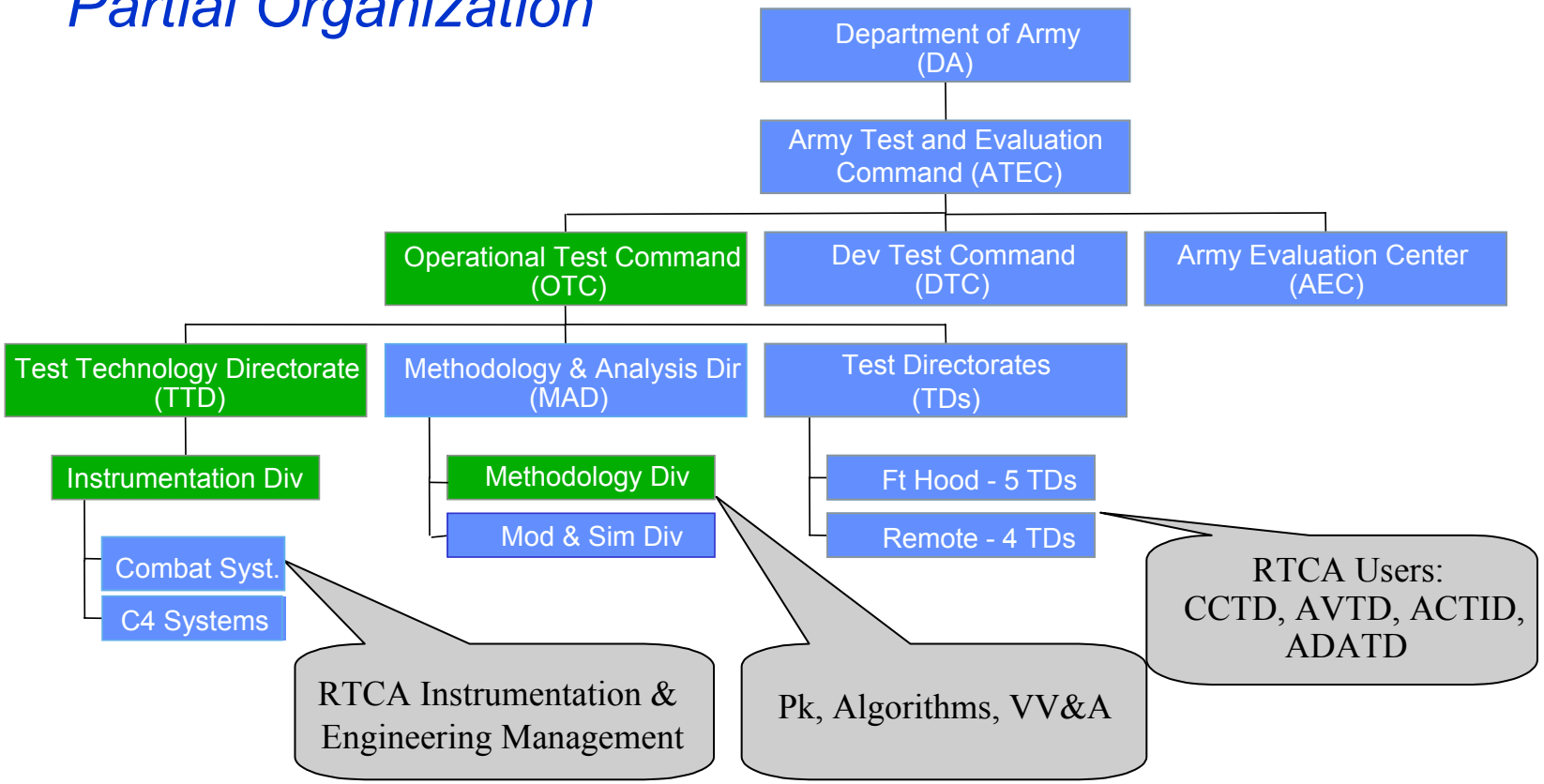
IMO

# Background

- Mobile Automated Instrumented Suite (MAIS) is a fielded system at the Operational Test Command (OTC) that provides field instrumentation to support Army Operational Tests employing the RTCA
- MAIS is a fully transportable, encrypted, and high fidelity system which enables real time exercise monitoring and control of up to 395 Players
- Supports five categories of players (ground vehicles, rotary wing, fixed wing, dismounted soldiers, and surrogate weapons)
- The Objective RTCA program upgrades and eventually replaces MAIS to address Future Threats and Weapon Systems, and Legacy-to-Objective Force Transition

# *Primary Program Mission is to Support OTC's TTD Division*

## *Partial Organization*



# *Why Upgrade the MAIS System*

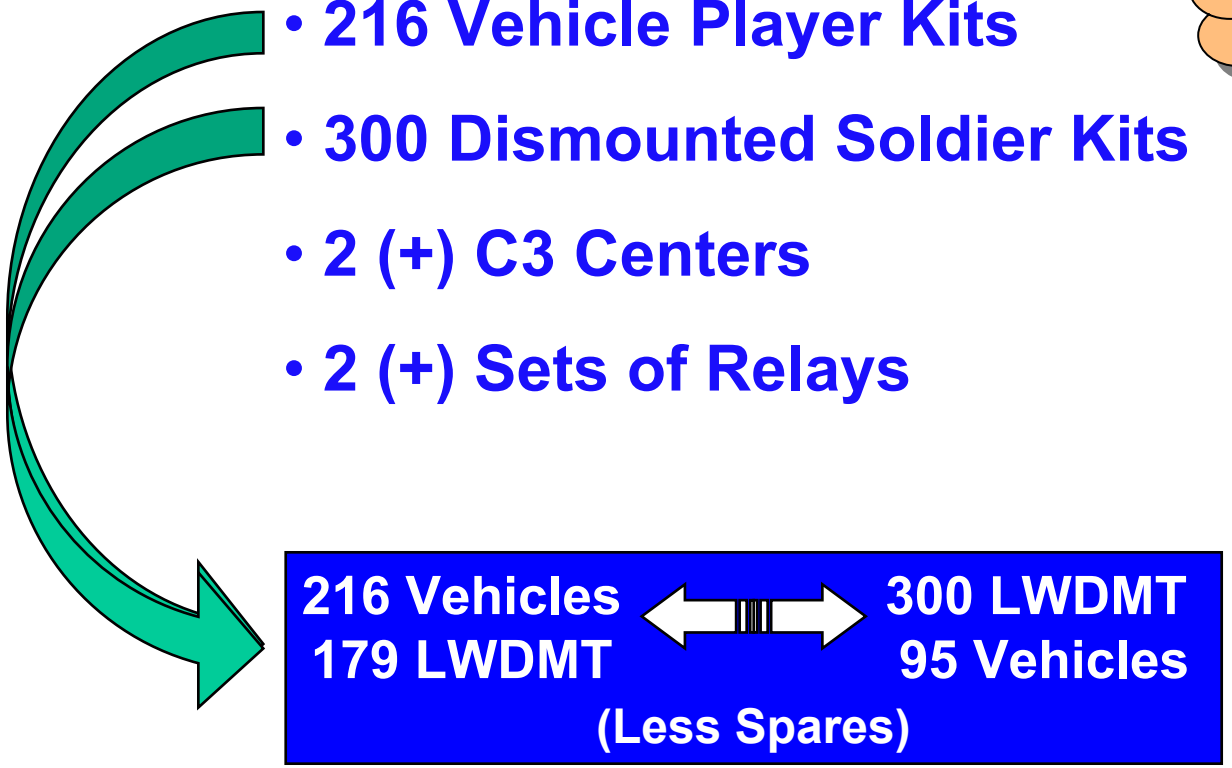
**FY 03 – 05 Window**

- Current encryption method in dan
  obsolescence
- Encroachment on transmission frequencies
- Planned tests require higher quantities then currently fielded.
- Too intrusive (size, weight, power consumption)
- High support costs
- Unable to provide 96 hours of continuous operation due to battery shortcomings & boresight retention issues

# INTERIM END-STATE

(FY02-05)

- 216 Vehicle Player Kits
- 300 Dismounted Soldier Kits
- 2 (+) C3 Centers
- 2 (+) Sets of Relays




IMO

# *Why Replace the MAIS System*

- New weapon systems require non line-of-sight pairing and complex fly-out algorithms
- Unable to adequately instrument Rotary Wing Aircraft, Fixed Wing Aircraft, Air Defense Artillery, and indirect fire systems
- Limited interoperability with constructive/virtual simulations
- Merging Army test and training
- FCS test requirements

**Out Years' Vision**

# OBJECTIVE END-STATE

- 300 Vehicle Player Kits
- 24 Rotary Wing Aircraft Kits
- 4 Fixed Wing Aircraft Kits (?)
- 20 Supplemental Vehicle Kits
- 600 Dismounted Soldier Kits
- 2 (+) C3 Centers/Sets of Relays

(FY06 and beyond)

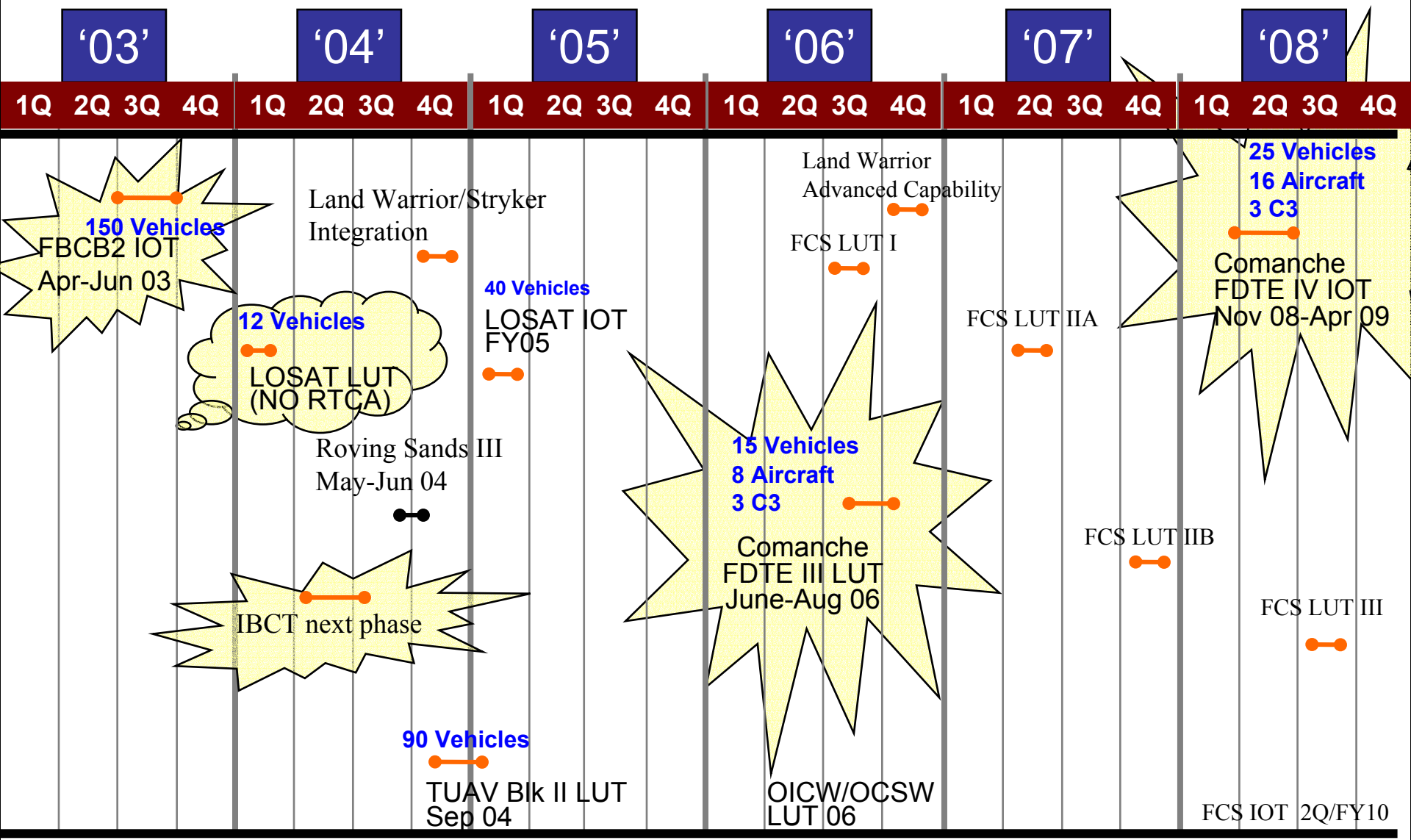
# *Objective RTCA Program Description*

- **Builds upon MAIS to overcome system shortcomings and provide the Operational Test Community with a high fidelity, realistic, real time capability to measure the performance of hardware and personnel under tactical conditions**
- **Allows the US Army to test all Legacy-to-Objective capabilities and FCS in a force-on-force operational environment**
- **Supports Transition from primarily Live to Live-Virtual-Constructive testing**
- **Moves from Platform-centric to Network-centric testing**


# *Objective RTCA Requirements*

- Requirement Doc: MAIS RIC (1990) and Draft Objective RTCA ORD
- Approval Date: Pending Signature
- Proponent: ATEC/OTC
- Contractor: Various
- Basis of Issue: 2 C3 Centers and up to 1820 Player Units
- Executing Agency: PM ITTS

*MAIS Long Range Test Support Schedule*



# *Customer Priority*

1. Supporting near-term tests (within 2 years)
2. Supporting out-year tests (new required capabilities)
3. Program infrastructure improvements (Advance the state-of-the-art)

# *Acquisition/Contracting*

- **Strategy**

  STOC Full and Open Competition preferred. Other acquisition vehicles used if more efficient

  Government is currently acting as LSI for MAIS upgrades and Objective RTCA path

- **Rationale**

  Original MAIS was a competitive award to Loral/Lockheed Martin and a sole source production contract to LMIS

  Existing contracts and the desire to merge test and training did not provide an efficient structure in FY 02-03 to allow for Industry LSI competition

# *Acquisition Vehicles Utilized*

- STOC Domain IV (PM ITTS)
- STOC Domain I (PM TRADE)
- PM ITTS TSMO Contract
- PM TRADE MOUT IDIQ
- OPS LTS Contract
- BAA
- SBIR
- OTC Contract

# *FY03 Objective RTCA Contractors*

Over $1M
- ACMS
- Icon Systems, Inc.*
- TESCO

Under $1M
- Anteon
- ATT
- Cubic
- FSCX
- G2*
- ICE
- Raytheon
- RapiTec*
- Riptide*
- SAIC
- SDRC
- SRC

***Major Sub**

# *FY Contractor Involvement*

- **ACMS/Icon Systems - MK-19 TES/Controller Guns**
- **ACMS/Icon Systems – Small Arms Transmitters**
- **ACMS - WPM upgrades**
- **ACMS - Encryption**
- **Anteon/Riptide/G2 - IC3**
- **ATT - OneTESS Test CDRL (in process)**
- **Cubic - Stryker Kits**
- **FSCX/SRC - MANET**
- **ICE/Nova - FIT-E**
- **ICE – Apache Fly-out model demonstration**
- **RAM - Geometric Pairing/Requirement analysis support**
- **RapiTec – Bi-directional link replacement study**
- **Raytheon/Icon - Halo**
- **Raytheon – Stryker test support**
- **SDRC/Cubic Defense Systems - Requirements analysis**
- **SRC – SA Fly-out model integration**
- **SAIC – OneTESS CDRL (in process)**
- **TESCO - Geometric Pairing/IC3**

# OBJECTIVE RTCA Thrust Areas

Near Term

- Complete C3 Upgrade
- Field & Upgrade Weapons Performance System (WPS) player units
- Field new lasers
- Field aspect angle kits

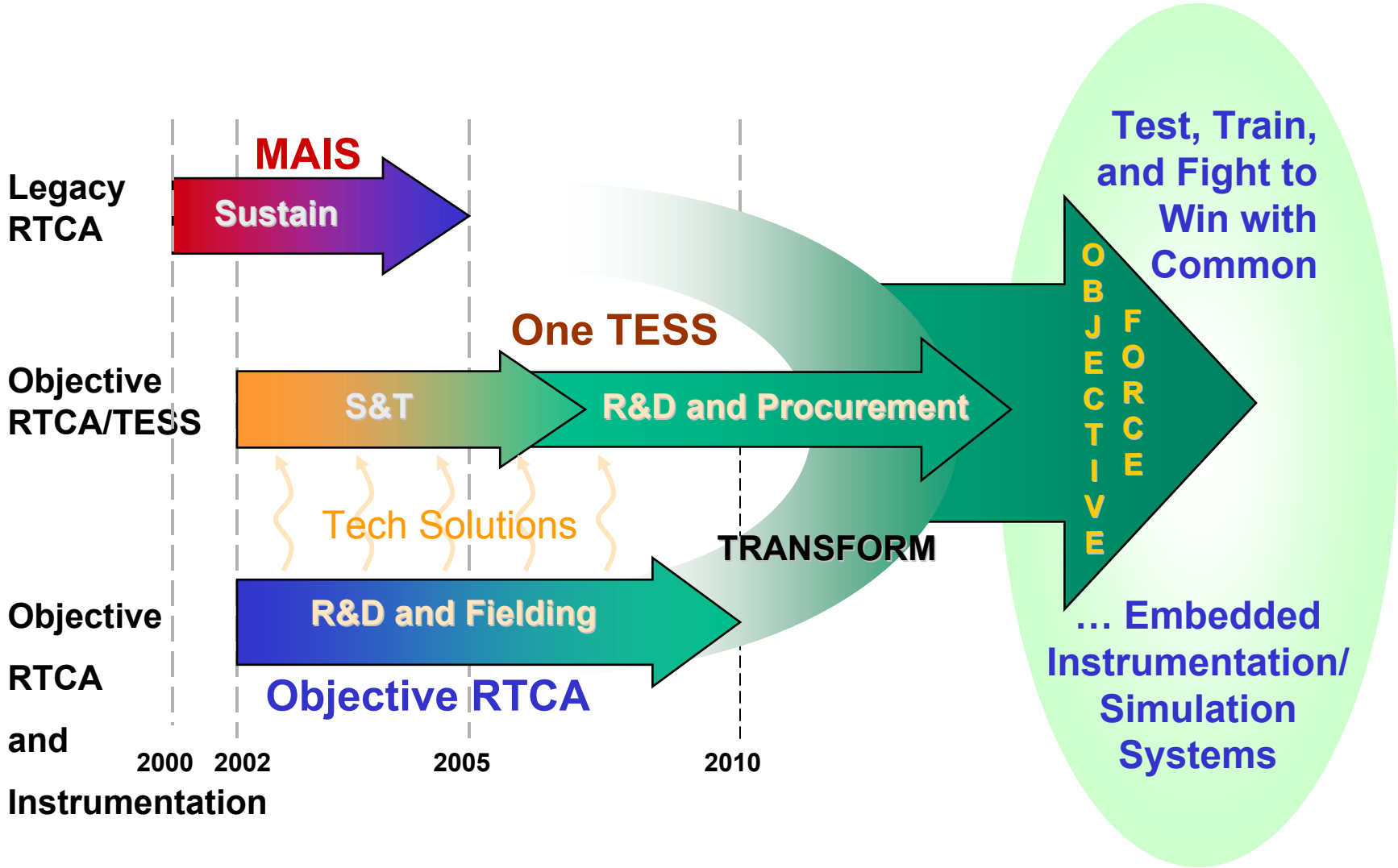
Mid Range (Over Next 5 Years)

- Modular Instrumentation Standards (CVII)
- Geometric Pairing - Incremental application
- Robust Aviation and Air Defense capabilities
- New Player Units (new Radios, new encryption, FPGA technology)
- Interoperability with other simulation systems & tactical C4I

Longer Range (10 Years)

- Visualization Features - tracers, fly-outs, burst effects, virtual targets
- Migration to embedded test & training instrumentation

# *Instrumentation/Simulation Transformation*




***… Supports RTCA Testing of ALL Legacy-to-Objective Combat Systems.***

# OBJECTIVE RTCA FUNDING

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| RDTE Funded | $$$ | $$$ | $$$$ | $$$$ | $$$$ | $$$$ | $$$$ |
| RDTE Unfunded | 0 | $$ | $$ | $$$ | $$ | $$ | $$ |
| OPA Funded | $$ | $$ | $$$ | $$$ | $$$$ | 0 | 0 |
| OPA Unfunded | 0 | $ | $$ | $$$ | $$$ | $$$$ | $$$$ |
| | | | | | | | |

# *Summary*

- Aggressively pursuing development of Objective RTCA Instrumentation:
  - – increased functionality and testing realism with reduced size, weight, cost
  - – provide realistic and cost-effective testing of Future Combat System and Objective Force digital battlefield initiatives
- Merge Test and Training (OneTESS, NTC-OIS, etc.)
- Support Near-term Operational Testing (e.g., Stryker IOT)